

REMARKS/ARGUMENTS

Applicants have amended Claims 1, 8, 40-45, 51-52, and 54. Applicants have cancelled Claim 38, and thus, the rejection of Claim 38 is moot. Claims 1-4, 6-18, 20-23, 25-37, and 39-57 are pending. Applicants respectfully request reconsideration of the pending claims in view of the following remarks.

TITLE AND ABSTRACT

Applicants have amended the title and the abstract of the application as suggested by the Examiner. Applicants respectfully request removal of the objections to the title and the abstract.

CLAIM REJECTIONS - 35 U.S.C. § 102(b)

Independent Claim 1

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 1,644,595 ("Karg"). Amended Claim 1 specifies "a heater in the discharge duct shielded from the discharge outlet by at least one interior wall of the discharge duct, substantially the entire heater located in a substantially straight portion of the discharge duct."

Karg discloses a heating device including an electrical heating element 41 or 61. The Examiner refers to Figures 5-7 of Karg where the casing 48 includes a substantially straight portion, as shown on the Examiner's annotated drawing sheet on page 18 of the Office Action. However, most of the heating element 41 lies outside the substantially straight portion. The other embodiments of Karg (shown in Figures 1-4 and Figure 10) also do not disclose substantially the entire heating element 41 or 61 located in a substantially straight portion of the casing 20 or 59.

Accordingly, Karg does not disclose "a heater in the discharge duct shielded from the discharge outlet by at least one interior wall of the discharge duct, substantially the entire heater located in a substantially straight portion of the discharge duct," as specified by Claim 1. Therefore, independent Claim 1 and dependent Claims 2-4, 6-13, and 15-16 are allowable.

Dependent Claims 2-4, 6, 8, and 9

Claims 1-4, 6, 8, and 9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Karg. Claims 1-4, 6, 8, and 9 depend from Claim 1 and are therefore allowable for the reasons set forth above with respect to Claim 1. Claims 1-4, 6, 8, and 9 also specify additional patentable subject matter not specifically discussed herein.

CLAIM REJECTIONS - 35 U.S.C. § 103(a)

Dependent Claims 7, 10-13, and 15-16

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of U.S. Patent No. 3,025,382 issued to Eisele (hereinafter "Eisele"). Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of U.S. Patent No. 2,445,250 issued to Steingruber (hereinafter "Steingruber"). Claims 11-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of U.S. Patent No. 1,982,139 issued to Kercher (hereinafter "Kercher"). Claim 13 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of CA679120. Claims 15-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of U.S. Patent No. 1,991,280 issued to Hynes (hereinafter "Hynes"). Claims 7, 10-13, and 15-16 depend from Claim 1 and are therefore allowable for the reasons discussed above with respect to Claim 1. Claims 7, 10-13, and 15-16 also specify additional patentable subject matter not specifically discussed herein.

Independent Claim 20

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of U.S. Patent No. 3,025,382 ("Eisele"). Claim 20 specifies "the discharge duct having a first cross-sectional area taken along a plane normal to the discharge duct at the heater, the discharge outlet having a second cross-sectional area taken along a plane normal to airflow passing through the discharge outlet, the second cross-sectional area being less than the first cross-sectional area; a ratio of the first cross-sectional area to the second cross-sectional area being no greater than 4:1 and no less than 1.125:1."

Karg teaches a heating device including a casing 20, 48, 59, as shown in Figures 1, 5, and 10, respectively. Each embodiment of the casing 20, 48, 59 is shown to have a discharge spout 38, 56, 60, respectively. The discharge spout 38 of Figure 1 is tapered, while the discharge spouts 56 and 60 of Figures 5 and 10 are not tapered. Applicants have filed a Declaration of Kenneth J. Jonas (hereinafter "Declaration") with this Amendment. As stated in the Declaration, each embodiment of Karg teaches that the ratio of the cross-sectional area of the duct at the heater to the cross-sectional area of the duct at the discharge outlet is greater than 6:1. Claim 20 specifies "a ratio of the first cross-sectional area to the second cross-sectional area being no greater than 4:1." The Declaration outweighs the evidence of obviousness by specifically comparing the claimed subject matter to the closest prior art, namely Karg. As a result, the Declaration effectively rebuts the *prima facie* case of obviousness.

Applicants agree with the Examiner's statement on pages 19-21 of the Office action that Karg only teaches the general conditions of the claim, namely the general concept of tapering the duct, but Karg is silent regarding the degree of taper from the heater to the outlet. As stated in the Declaration, the claimed range of ratios provides unexpected and beneficial results (near silent operation, for example) that are a direct result of the claimed ratios and that are unattainable with a device having ratios outside the claimed range. The tapered structure of Karg would not achieve results commensurate to the range specified by Claim 20. The casing of Karg would produce a significantly more pronounced nozzle effect between the location of the heater and the outlet due to a significantly higher reduction in cross-sectional area, which would result in the various problems described in the Declaration (overheating, "red spots," noise, and vibration). As stated in the Declaration, the design parameters (including heating of the duct, exit air speed, air speed over the heater, vibration, and noise) are all directly affected by the ratio of the cross-sectional areas at the heater and at the outlet. Karg would not perform to the level of the claimed device, because Karg only teaches ratios well outside the claimed range. Thus, Karg does not teach or suggest the range of ratios specified by Claim 20.

Eisele does not cure the deficiencies of Karg. Eisele teaches a heater mounted within a duct 22. However, the duct 22 is not tapered. Thus, Eisele does not teach the range of ratios specified by Claim 20.

Accordingly, neither Karg nor Eisele, either alone or in combination, teaches or suggests “a discharge duct having a first cross-sectional area at the heater, and a discharge outlet having a second cross-sectional area, wherein the second cross-sectional area is less than the first cross-sectional area, with a ratio of no greater than 4:1 and no less than 1.125:1,” as specified by Claim 20. Therefore, independent Claim 20 and dependent Claims 21-23, 25-32, and 34-35 are allowable.

Dependent Claims 21-23, 25-29, 30-32, and 34-35

Claims 21-23 and 25-28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Eisele. Claim 29 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Eisele and further in view of Steingruber. Claims 30-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Eisele and further in view of Kercher. Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Eisele and further in view of CA679120. Claims 34-35 stand rejected 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Eisele and further in view of Hynes. Claims 21-23, 25-29, 30-32, and 34-35 depend from Claim 20 and are therefore allowable for the reasons discussed above with respect to Claim 20. Claims 21-23, 25-29, 30-32, and 34-35 also specify additional patentable subject matter not specifically discussed herein.

Dependent Claims 40-52 and 54-55

Claims 40-43 and 45-50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Kercher. Claim 44 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Kercher and further in view of Eisele. Claim 51 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Kercher and further in view of Steingruber. Claim 52 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Kercher and further in view of CA679120. Claim 54-55 stand

rejected under 35 U.S.C. § 103(a) as being unpatentable over Karg in view of Kercher and further in view of Hynes. Claims 40-52 and 54-55 have been amended to depend from allowed independent Claim 39, and are therefore allowable. Claims 40-52 and 54-55 also specify additional patentable subject matter not specifically discussed herein.

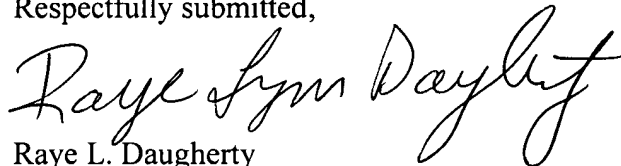
ALLOWABLE SUBJECT MATTER

Applicants appreciate the indication that Claims 14, 17, 18, 33, 36, 37, 39, 53, 56, and 57 are allowable.

CONCLUSION

In light of the above remarks, Applicants respectfully request reconsideration and allowance of pending Claims 1-4, 6-18, 20-23, 25-37, and 39-57.

Respectfully submitted,

A handwritten signature in black ink, reading "Raye Lynn Daugherty". The signature is fluid and cursive, with the first name "Raye" and last name "Daugherty" clearly legible.

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